



Calhoun: The NPS Institutional Archive
DSpace Repository

Theses and Dissertations

1. Thesis and Dissertation Collection, all items

1991-12

Intelligence database support for naval arms control

Shirer, Richard H.; Corral, Diego R.

Monterey, California. Naval Postgraduate School

<http://hdl.handle.net/10945/43750>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>

AD-A246 430



NAVAL POSTGRADUATE SCHOOL Monterey, California

2



DTIC
SELECTE
FEB 28 1992
S B D

THESIS

INTELLIGENCE DATABASE SUPPORT
FOR NAVAL ARMS CONTROL

by

Richard H. Shirer, Jr.

Diego R. Corral

DECEMBER 1991

Thesis Advisor:

James J. Tritten

Approved for public release: Distribution is unlimited

92-04966



92 2 25 202

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE				Form Approved OMB No 0704-0188	
1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release: Distribution is unlimited		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION Naval Postgraduate School		6b. OFFICE SYMBOL (If applicable) NS	7a. NAME OF MONITORING ORGANIZATION Naval Postgraduate School		
6c. ADDRESS (City, State and ZIP Code) Monterey, CA 93943-5000			7b. ADDRESS (City, State, and ZIP Code) Monterey, CA 93943-5000		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBER		
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
11. TITLE (Include Security Classification) INTELLIGENCE DATABASE SUPPORT FOR NAVAL ARMS CONTROL					
12. PERSONAL AUTHORS RICHARD H. SHIRER, JR. and DIEGO R. CORRAL					
13a. TYPE OF REPORT Master's Thesis		13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Year, Month, Day) DECEMBER 1991	
15. PAGE COUNT 86					
16. SUPPLEMENTARY NOTATION The views expressed are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block numbers)		
FIELD	GROUP	SUB-GROUP			
19. ABSTRACT (Continue on reverse if necessary and identify by block numbers) <p>The database contained in this thesis was put together from unclassified sources. It is stored on computer disk using the Lotus 123 software program and is easily updated and manipulated. This database was created to provide support to U.S. Naval arms control negotiators in the event that the Navy is forced to the negotiating table.</p> <p>This thesis does not advocate naval arms control. However, given the current political climate it is prudent to be prepared for such an eventuality. This assessment utilizes a methodology for determining excess naval forces of the Soviet Union that would be targetable in arms control talks. (CONTINUED ON NEXT SHEET)</p>					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT XX UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL James J. Tritten			22b. TELEPHONE (Include Area Code) (408) 646-2143		22c. OFFICE SYMBOL NS/Tr

Continued from block 19

In order to quantify the excess, we constructed a Soviet naval model that would be adequate to meet Soviet security goals under "defensive defense" doctrine. Our goal was not to present the Soviet Union with a plan of action but to come up with a reasonable estimate of what their force structure is likely to resemble. Again, it is the methodology which is important here, as specific numbers can easily be changed using the Lotus program to account for classified information or changing developments.

Once we established the current force levels and a model of likely forces necessary under "defensive defense," it was easy to determine an excess of Soviet naval forces. Our findings are summarized in the following table:

EXCESS FORCES

Strike Submarines	140
Surface Strike	-9
Surface ASW	-6
Surface Escorts	22
Mine Warfare	161
Amphibious	61
Long Range Air	35
Attack Subs	26
Theater Surface	575
Patrol Combatants	62
Theater Aircraft	218

Approved for public release: Distribution is unlimited

Intelligence Database Support for Naval Arms Control

by

Richard H. Shirer, Jr.
Lieutenant, United States Navy
B.A., University of New Orleans, 1985

Diego R. Corral
Lieutenant, United States Navy
B.S., South Dakota State University, 1978

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE
IN NATIONAL SECURITY AFFAIRS

from the

NAVAL POSTGRADUATE SCHOOL

DECEMBER 1991

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

Author:

Richard H. Shirer, Jr.

Diego R. Corral

Approved by:

James J. Tritten, Thesis Advisor

Ralph N. Channell, Second Reader

Thomas C. Bruneau, Chairman
Department of National Security Affairs

ABSTRACT

The database contained in this thesis was put together from unclassified sources. It is stored on computer disk using the Lotus 123 software program and is easily updated and manipulated. This database was created to provide support to U.S. Naval arms control negotiators in the event that the Navy is forced to the negotiating table.

This thesis does not advocate naval arms control. However, given the current political climate it is prudent to be prepared for such an eventuality. This assessment utilizes a methodology for determining excess naval forces of the Soviet Union that would be targetable in arms control talks.

In order to quantify the excess, we constructed a Soviet naval model that would be adequate to meet Soviet security goals under "defensive defense" doctrine. Our goal was not to present the Soviet Union with a plan of action but to come up with a reasonable estimate of what their force structure is likely to resemble. Again, it is the methodology which is important here, as specific numbers can easily be changed using the Lotus program to account for classified information or changing developments.

Once we established the current force levels and a model of likely forces necessary under "defensive defense," it was easy to determine an excess of Soviet naval forces. Our findings are summarized in the following table:

EXCESS FORCES

Strike Submarines	140
Surface Strike	-9
Surface ASW	-6
Surface Escorts	22
Mine Warfare	161
Amphibious	61
Long Range Air	35
Attack Subs	26
Theater Surface	575
Patrol Combatants	62
Theater Aircraft	218

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	LOTUS	5
III.	TOTAL FORCE LEVELS	7
IV.	FLEET ASSIGNMENTS	17
V.	SOVIET NAVAL DEPLOYMENTS	38
VI.	CONTIGUOUS WATERS CAPABILITY	45
VII.	FUTURE SOVIET FORCE STRUCTURE	55
VIII.	RESULTS AND CONCLUSIONS	63
	APPENDIX: GLOSSARY	68
	BIBLIOGRAPHY	76
	INITIAL DISTRIBUTION LIST	77

LIST OF TABLES

TABLE I	STRATEGIC FORCES	8
TABLE II	LONG RANGE MARITIME FORCES	9
TABLE III	ACTIVE THEATER MARITIME FORCES	11
TABLE IV	MISCELLANEOUS FORCES	14
TABLE V	NORTHERN FLEET FORCES	18
TABLE VI	PACIFIC FLEET FORCES	23
TABLE VII	BLACK SEA FLEET FORCES	28
TABLE VIII	BALTIC FLEET FORCES	33
TABLE IX	SOVIET NAVY FORWARD DEPLOYMENTS	40
TABLE X	IMPACT OF FORWARD DEPLOYMENTS/TRANSIT FORCES	42
TABLE XI	PERCENTAGES	46
TABLE XII	NORTHERN FLEET - CONTIGUOUS WATERS CAPABILITY	47
TABLE XIII	PACIFIC FLEET - CONTIGUOUS WATERS CAPABILITY	49
TABLE XIV	BLACK SEA FLEET - CONTIGUOUS WATERS CAPABILITY	51
TABLE XV	BALTIC FLEET - CONTIGUOUS WATERS CAPABILITY	53
TABLE XVI	NAVAL TASK GROUPS	55
TABLE XVII	PROJECTED SOVIET FORCE REQUIREMENTS	59
TABLE XVIII	FORCED REQUIRED TO MEET MOBILIZATION THREAT	60
TABLE XIX.	FORCE STRUCTURE BASED ON DEFENSIVE DEFENSE	61
TABLE XX	PRESENT ACTIVE FORCES	62
TABLE XXI	EXCESS FORCES	62, 66

I. INTRODUCTION

Intelligence support is essential to naval arms control negotiations with the Soviet Union. Given the dramatic changes in the world suggesting an end of the cold war and the impatience of the American public to commence spending of the "peace dividend," and despite the government's objection to naval arms control, planners and policy makers in the United States Navy may yet end up at the bargaining table with the Soviets. If the U.S. Navy ends up at the bargaining table, it is better to have some idea what types of concessions on forces that it would like to get from the U.S.S.R.

In this thesis, we specify a method for assessing any "excess" in the Soviet naval inventory so as to quantitatively identify ships and submarines that may be targeted by U.S. arms control negotiators. The methodology is employed to calculate the number of currently available naval units and subtract from this number what is actually needed by the Soviets to fulfill their new missions under "defensive defense."

The first part of the problem was solved by applying the same methodology used by James Tritten in his "Soviet Naval Data Base 1982-1983" (James John Tritten, April 1983, RAND P-6859) and in his book *Soviet Naval Forces and Nuclear Warfare: Weapons, Employment, and Policy*, (James J. Tritten, Westview Press: Boulder, CO, 1986). From unclassified sources, we compile the numbers

of ships and submarines and then assign them to various fleets. The ships are put into classes as strategic, long range maritime and theater forces. Once this is done, we must subtract the number of forces on routine deployment.

The result of the above is the total number of naval units available in each of the fleets. This of course is an inflated number because all units will not be available for war at any one time. No navy can put 100% of its fleet to sea. It is therefore necessary to estimate a percentage of units available under various threat conditions. This gives us a realistic view of what is available to the Soviets in each circumstance.

In his book Prof. Tritten says, "The methodology will be directly usable for any year."¹ We have done exactly this but have also entered the data into tables using the Lotus 123 software package making the updating or substitution of numbers much easier by follow-on researchers and students at NPS.

The second part of the problem is to estimate what the Soviet Navy requires to accomplish its mission. To do this, we put ourselves in the position of the Soviet General Staff: we accept the draft Soviet doctrine of defensive defense as

¹ Tritten, James John, "Soviet Navy Data Base: 1982-1983," RAND P-6859, April 1983, p. 3.

authoritative and predictive.² We also accept the severe economic pressures in the USSR that require a reduction in their armed forces. We then ask what do we really need for defense of the homeland? Subtracting this number from the total available will give an excess which should be the target of U.S. arms control negotiations.

The unclassified sources used for the raw numbers and the fleet assignments are:

1. *Combat Fleets of the World*, ed. Barnard Prezelin (English language version prepared by A.D. Baker III): Naval Institute Press, Annapolis, MD, 1990, current through 1 January 1990.
2. *Janes's Fighting Ships*, ed. Richard Sharpe: Janes Information Group, Inc.: Coulsdon, Surrey, England, 1990, current through October 1989.
3. *The Military Balance*, The International Institute for Strategic Studies: London, current through 1 June 1990

These sources were chosen because they are unclassified, updated annually and generally regarded as reliable.

² "On the Military Doctrine of the USSR (Draft)," Moscow *Voyennaya Mysl* in Russian, Special Issue, signed to press November 30, 1990, pp. 24-28 (JPRS-UMT-91-001-L, January 3, 1991, pp. 14-17); and Marshal of the Soviet Union Dmitriy Yazov, USSR Minister of Defense, "USSR Ministry of Defense Draft Military Reform Concept," Moscow *Pravitelstvennyy Vestnik* in Russian, No. 48, November 1990, pp. 5-10 (FBIS-SOV-90-239, December 12, 1990, pp. 62-75; or JPRS-UMA-90-028, December 17, 1990, pp. 52-70); or as published in Moscow *Voyennaya Mysl* in Russian, Special Edition, signed to press November 30, 1990, pp. 3-23 (JPRS-UMT-91-001-L, January 3, 1991, pp. 1-14).

Based upon the final outcome, we suggest an approach to arms control negotiations. Even though we should not be willing to sacrifice essential naval assets to gain reductions in Soviet forces that will be made based on their new policy and economic constraints, if forced to an arms control negotiation over numbers of units, the U.S. Navy should have some idea what it would like to see reduced on the Soviet side. The methodology outlined in this thesis can be easily adapted to classified data applied to internal government analysis.

II. LOTUS

As mentioned in the introduction, we used the Lotus software package to store and manipulate the data. This program allows us to do routine mathematical calculations and update the data base on a routine basis. Each "cell" in the Lotus spreadsheet is designated by its column (a letter) and its row (a number). The cell may contain a numeric piece of data or a formula that may be any combination of designated cells in mathematical operations or numbers.

The general characteristics of the Lotus 123 software program offer a range of features that are well suited to this study and to further research. Once the data is entered for a given year from the various sources it is quite an easy thing to update the numbers in successive years. Even when a ship or submarine is eliminated totally, deletion of the particular line does not upset the balance of the data base or calculations in the later derived tables. The Lotus program automatically updates all formulas. When a line is added however the task is only slightly laborious. All formulas will update except those that specifically use the newly inserted cell.

To accommodate for variation in the raw data reported by the unclassified sources, and to facilitate quick results from "what if" scenarios, we have what we call an assumed column. This column will not automatically be filled in with the average value calculated by the Lotus program. It must be entered by the user of

the program to ensure human intervention at critical stages. The number in the assumed number column is the one used in subsequent formulas that are used to manipulate the raw numbers and create the resulting tables. In most cases the assumed number will be the calculated average value.

The actual commands are outlined in Appendix A but the general idea for use of the data base is as follows. There are two programs. One is a template which has only the raw data and formulas where none of the assumed numbers are entered. This disc contains only the information and derived tables to assess the present capabilities. The other data base is the one that we have used to obtain our results. The recommended procedure for use is to copy the appropriate disc and to go to work from there.

Finally, we suggest that the optimal data base would have all of the assets of the Lotus program but not require one to actually use Lotus. This program would have certain basic categories already preset to inquire about and then ask one to define the subcategories of data and then to enter the raw numbers obtained from the various sources. For example, the computer would ask What types of ballistic missile submarines are to be considered? The user would supply this information and our ideal program would then insert these categories in the Lotus type spreadsheet. The computer would then ask how many are listed in Jane's? It would then fill that number into the correct Lotus cell.

III. TOTAL FORCE LEVELS

This section deals with the raw numbers from the various sources. We use the same logic as used by Prof. Tritten in his 1982-83 Soviet Navy Data Base for categorizing the assets of the Soviet Navy.³ We also include a glossary (Appendix B) which is a slightly updated version of Prof. Tritten's.

These forces are divided into two groups: strategic and conventional. The strategic forces consist of Soviet Ballistic missile submarines and the conventional forces are all the rest. In our study, we will deal with the strategic forces in a different manner than Prof. Tritten. As mentioned earlier his study was based on an assumption of an aggressive Soviet naval posture and was concerned with how much offensive power they could assemble under various conditions. Our study assumes a defensive posture. Although we will be using different assumptions in assessing Soviet needs as concerns their strategic forces, we include the necessary tables and formula to assess their offensive capability.

The conventional forces are divided along the same lines as in Prof. Tritten's study. The broad categories of assets are:

1. Long Range Maritime
2. Active Theater Maritime

³ Tritten, *op. cit.*, pp. 4-5.

3. Miscellaneous

The long range active forces are those surface ships over 1000 tons and the deployable nuclear powered submarines and best diesels. These are the forces capable of conducting sustained operations with limited support from land based air assets.

The active theater forces are the naval forces that are under 1000 tons, and non-missile carrying escorts. This conforms to the guidelines used in Prof. Tritten's survey.

The miscellaneous forces are those that are used for research purposes or are reserve units. These are not readily available for war fighting but need to be considered in any total arms control negotiation. The forces listed here will not be divided to various fleets as the other forces will be.

**TABLE I
STRATEGIC FORCES**

	Combat	Jane's	IJSS	Average	Assumed
STRATEGIC-MISSILE SUBMARINES				68	64
SSBN				68	64
- Typhoon		6	6	6	6
- Delta IV	6	6	6	6	6
- Delta III	6	14	14	11	14
- Delta II	14	4	4	7	4
- Delta I	4	18	18	13	18
- Yankee II	18	1	1	7	1
- Yankee I	1	14	14	10	14
- Hotel III	14	1		8	1

**TABLE II
LONG RANGE MARITIME FORCES**

	Combat	Jane's	IISS	Average	Assumed
STRIKE SUBMARINES				191	186
CRUISE-MISSILE ATTACK SUBMARINES				63	63
SSGN				49	49
- Yankee	1	1	1	1	1
- Papa	1	1		1	1
- Charlie II	6	6	6	6	6
- Charlie I	9	10	9	9	9
- Oscar II	3	4	4	4	4
- Oscar I	2	2	2	2	2
- Echo II	28	28	22	26	26
SSG - Juliett	12	16	14	14	14
FLEET ATTACK SUBMARINES				128	123
SSN				70	65
- Akula	5	5	5	5	5
- Sierra	3	2	2	2	2
- Alpha	5	6	5	5	5
- Victor III	24	24	24	24	24
- Victor II	7	7	7	7	7
- Victor I	16	16	16	16	16
- Yankee (notch)	2	3	2	2	2
- November		11	4	8	4
SS				58	58
- Foxtrot	38	44	39	40	40
- Tango	18	18	18	18	18
SURFACE STRIKE				33	34
CV - Tbilisi	1	1	1	1	1
CVHG				4	4
- Kiev	3	3	3	3	3
- Baku	1	1	1	1	1
CGN - Kirov	3	3	3	3	3

TABLE II
LONG RANGE MARITIME FORCES

	Combat	Jane's	IISS	Average	Assumed
CG				11	11
- Slava	3	3	3	3	3
- Kresta I	4	4	4	4	4
- Kynda	4	4	4	4	4
CC/CL - Sverdlov		3	3	3	3
DDG - Sovremenny	11	12	12	12	12
SURFACE ASW				30	30
CHG - Moskva	2	2	2	2	2
CG				17	17
- Kara	6	7	7	7	7
- Kresta II	10	10	10	10	10
DDG - Udaloy	11	11	11	11	11
SURFACE ESCORTS				55	55
DDG				17	17
- Kilden w SSM			1	1	1
- Kashin w SSM	4	3	4	4	4
- Kashin	13	13	10	12	12
FFG				38	38
- Krivak III	5	5		5	5
- Krivak II	11	11	11	11	11
- Krivak I	21	21	21	21	21
- Balcom	1	1		1	1
MINE WARFARE				116	116
MCS				4	4
- Alesha	3	3	3	3	3
- Gorya	1	1	1	1	1
MCM - Polnochny A @ B		4		4	4

TABLE II
LONG RANGE MARITIME FORCES

	Combat	Jane's	IISS	Average	Assumed
MSF				108	108
- Natya II	1	1	1	1	1
- Natya I	34	34	34	34	34
- Yurka	41	44	45	43	43
- T 43 Class		30	29	30	30
AMPHIBIOUS				41	41
LPD - Ivan Rogov (522 troops)	3	3	3	3	3
LST				38	38
- Ropucha (225 troops)	25	24	24	24	24
- Alligator (300 troops)	14	14	14	14	14
LONG RANGE AIRCRAFT				225	239
BOMBERS				136	150
- Backfire	130	150	129	136	150
MPA/ASW				89	89
- Bear F	109	80	77	89	89

TABLE III
ACTIVE THEATER MARITIME FORCES

	Combat	Jane's	IISS	Average	Assumed
THEATER BALLISTIC MISSILE SUBMARINES				2	2
SSB - G II			2	2	2
ATTACK SUBMARINES				72	61
SSN - H II	12	6		9	6
SS				63	55
- K	30	15	15	20	14
- W		44	42	43	41

TABLE III
ACTIVE THEATER MARITIME FORCES

	Combat	Jane's	IJSS	Average	Assumed
THEATER SURFACE				679	585
FF/FFL				146	145
- Koni	1	1	1	1	1
- Riga	28	20	15	21	21
- Petya III	2			2	2
- Mod Petya II	1	1	1	1	1
- Petya II	18	11	10	13	10
- Mod Petya I	11	8	7	9	9
- Petcha I		4	4	3	4
- Mirka II	9	8	8	8	8
- Mirka I	7	5	5	6	6
- Parchim II	12	12	12	12	12
- Grisha V	13	14	11	13	13
- Grisha IV	1			1	1
- Grisha III	31	32	28	30	30
- Grisha II	12			12	12
- Grisha I	15	15	14	15	15
PATROL COMBATANTS				256	163
With Missiles				71	71
PGG				70	70
- Dergach	1			1	1
- Tarantul III	16	13	13	14	14
- Tarantul II	19	19	19	19	19
- Tarantul I	2	2	2	2	2
- Nanuchka IV	1	1	1	1	1
- Nanuchka III	15	15	17	16	16
- Nanuchka I	17	16	18	17	17
PPGH - Sarancha	1	1	1	1	1

TABLE III
ACTIVE THEATER MARITIME FORCES

	Combat	Jane's	IISS	Average	Assumed
Without missiles				185	92
PG				170	77
- Pauk	330	34	10	125	32
- Poti	49	44	40	44	44
- Svetlak	1	1		1	1
PGF - T-58		15		15	15
MINE WARFARE				240	239
MSF				109	109
- Gorya	1			1	1
- Natya II	1	1	1	1	1
- Natya I	34	34	34	34	34
- Yurka	41	44	45	43	43
- T-43		30	29	30	30
MSC				131	130
- Andryusha	2	2	2	2	2
- Baltika	1	1		1	1
- Sasha		2		2	2
- Sonya	61	65	70	65	65
- Vanya	65	50	50	55	55
- Mod Vanya	3	3	3	3	3
- Zhenya	2	2	3	2	2
AMPHIBIOUS				38	38
LSM - Polnocny (180 troops)	35	43	36	38	38
THEATER AIRCRAFT				478	524
BOMBERS	171	200	140	170	200
- Badger	146	175	125	149	175
- Blinder	25	25	15	22	25
FIGHTER-BOMBERS	151	174	179	168	174
- Fitter	0	74	97	80	74
- Forger	81	100	79	87	100

TABLE III
ACTIVE THEATER MARITIME FORCES

	Combat	Jane's	IISS	Average	Assumed
MPA/ASW	138	150	130	139	150
- Mail	93	100	92	95	100
- May	45	50	38	44	50

TABLE IV
MISCELLANEOUS FORCES

	Combat	Jane's	IISS	Average	Assumed
R&D BALLISTIC MISSILE SUBS				1	0
SSBN - H III		1		1	0
RESERVE ATTACK SUBMARINES				48	48
SS/SSC				48	48
- Foxtrot		15	10	13	13
- Whiskey	30	40	30	33	33
- Zulu IV		2	2	2	2
MISCELLANEOUS SUBMARINES				17	17
SSGN - Yankee Conversion	1	1	1	1	1
SSN				2	2
- Echo II Research	1			1	1
- X-Ray Research	1	1	1	1	1
SSQN - Hotel II Comms.	1	1		1	1
SSAN - Uniform Research	2		2	2	2
SSA				4	4
- Beluga Research	1	1	1	1	1
- India Salvage/Rescue	2	2	2	2	2
- Lima Research	1	1	1	1	1
SSQ - Golf I Comms.		3	3	3	3
SST - Bravo	4	4	4	4	4

TABLE IV
MISCELLANEOUS FORCES

	Combat	Jane's	IISS	Average	Assumed
MISCELLANEOUS SURFACE FORCES				97	97
Air Cushion Vehicles				82	82
- Pomornik	3	4	4	4	4
- Aist	20	20	20	20	20
- Tsaplya	4	5	6	5	5
- Lebed	20	20	20	20	20
- Gus	32	32	30	31	31
- Utenok		2	2	2	2
Wing-in-ground effect craft				4	4
- Orlan	3	3	3	3	3
- Utka	1	1		1	1
AXT				5	5
- Smolny	3	3		3	3
- Ugra	2	2		2	2
PGR				6	6
- T-58	3	3		3	3
- T-43		3		3	3
COASTAL COMBATANTS				196	144
With Missiles				138	85
PTGH - Matka	16	16	16	16	16
PTG				69	69
- OSA II	26	26	30	27	27
- OSA I	40	45	40	42	42
Without Missiles				58	59
PCSH				16	16
- Babuchka	1	1	1	1	1
- Muravey	14	15		15	15
PT - Shershen		3	3	3	3
PTH - Turya	29	31	30	30	30
PCS - SO-1		12	7	10	10

**TABLE IV
MISCELLANEOUS FORCES**

	Combat	Jane's	IISS	Average	Assumed
RESERVE SURFACE				20	20
CC/CL - Sverdlov		3	2	3	3
DD - Skoryy			5	5	5
FF - Riga		5	5	5	5
PGR - T-43		2		2	2
MSF - T-43		5		5	5
KGB FORCES				154	155
WFF - Purga	1	1	1	1	1
WFFL - Grisha II	12	12	12	12	12
PATROL/COASTAL COMBATANTS				141	142
WPGF - Ivan Susanin	6	7		7	7
WPCS				120	120
- SO-1					
- Stenka	115	122	120	119	119
- Svetlyak		1	1	1	1
WPCSH - Muravey	14		15	15	15

IV. FLEET ASSIGNMENTS

Assignment of forces to the various fleets was accomplished by calculating a percentage of the ships assigned from the three sources. In several instances, due to the different ways that ships were grouped, there is some variation in the percentage. For this reason we use an "assumed percentage" column. This is the number that must be entered by the user of the program. The "assumed number" is the calculated result using the assumed percentage and multiplying by the assumed number for that ship type from the raw data tables.

In Prof. Tritten's data base, he cross checked his final results by calculating the total number of all units of a particular category, for example submarines, that were assigned to a particular fleet by a reference source. He then compared that number to the sum of all Typhoons, Delta IV's, etc. derived from the fleet assignment tables and prepared standard deviation tables to prove the accuracy of this method.⁴

Though we did not perform these calculations for this study, it should be noted that it is possible to do so with one of the more advanced applications of the Lotus 123 program.

⁴ *Ibid.*, pp. 24-25.

TABLE V
NORTHERN FLEET FORCES

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
STRATEGIC-MISSILE SUBMARINES						8
SSBN	0.62	0.63	0.61	0.62		8
- Typhoon				0.62	0.62	4
DELTA/YANKEE						4
- Delta IV				0.62	0.62	4
- Delta III				0.62	0.62	9
- Delta II				0.62	0.62	2
- Delta I				0.62	0.62	11
- Yankee II				0.62	0.62	1
- Yankee I				0.62	0.62	9
- Hotel III				0.62	0.62	1
STRIKE SUBMARINES						134
CRUISE-MISSILE ATTACK SUBMARINES						33
SSGN	0.57	0.54	0.59	0.57		28
- Yankee				0.57	0.57	1
- Papa				0.57	0.57	1
- Charlie II				0.57	0.57	3
- Charlie I				0.57	0.57	5
- Oscar II				0.57	0.57	2
- Oscar I				0.57	0.57	1
- Echo I				0.57	0.57	15
SSG	0.43	0.31	0.36	0.37		5
- Juliett				0.37	0.37	5
FLEET ATTACK SUBMARINES						101
SSN	0.63	0.69	0.62	0.64		84
- Akula				0.64	0.64	3
- Sierra				0.64	0.64	1
- Alpha				0.64	0.64	46
- Victor III				0.64	0.64	15
- Victor II				0.64	0.64	4
- Victor I				0.64	0.64	10
- Yankee (notch)				0.64	0.64	1
- November				0.64	0.64	3

**TABLE V
NORTHERN FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
SS	0.25	0.32	0.28	0.28		16
- Foxtrot				0.28	0.28	11
- Tango				0.28	0.28	5
SURFACE STRIKE						8
CV	1.00	1.00	1.00	1.00		0
- Tbilisi				1.00	1.00	0
CVHG	0.33	0.50	0.50	0.44		0
- Kiev				0.44	0.50	0
- Baku				0.44	0.50	0
CGN	0.10	0.33		0.22		1
- Kirov				0.22	0.33	1
CG	0.33	0.36	0.43	0.37		4
- Slava				0.37	0.37	1
- Kresta I				0.37	0.37	1
- Kynda				0.37	0.37	1
CC/CL		0.00		0.00		0
- Sverdlov				0.00	0.00	0
DDG	0.25	0.31	0.27	0.27		3
- Sovremenny				0.27	0.27	3
SURFACE ASW						9
CHG	0.33	0.00	0.00	0.11		0
- Moskva					0.00	0
CG	0.33	0.36	0.43	0.37		6
- Kara				0.37	0.37	3
- Kresta II				0.37	0.37	4
DDG	0.25	0.31	0.27	0.27	0.27	3
- Udaloy						
SURFACE ESCORTS						13
DDG	0.25	0.31	0.27	0.27		5
- Kilden DD w SSM				0.27	0.27	0
- Kashin w SSM				0.27	0.27	1
- Kashin				0.27	0.27	3
- Kanin				0.27	0.27	0

**TABLE V
NORTHERN FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
FFG	0.21	0.24	0.23	0.23		9
- Krivak III				0.23	0.23	1
- Krivak II				0.23	0.23	3
- Krivak I				0.23	0.23	5
- Balcom				0.23	0.23	0
MINE WARFARE		0.17	0.20	0.18		21
MCS						1
- Alesha				0.18	0.18	1
- Gorya				0.18	0.18	0
MCM - Polnochny A @ B				0.18	0.18	1
MSF				0.18	0.18	19
- Natya II				0.18	0.18	0
- Natya I				0.18	0.18	6
- Yurka				0.18	0.18	8
- T 43 Class				0.18	0.18	5
AMPHIBIOUS						9
LPD		0.00	0.19	0.10		0
- Ivan Rogov (522 troops)				0.10	0.10	0
LST		0.24	0.19	0.22		8
- Ropucha (225 troops)				0.22	0.22	5
- Alligator (300 troops)				0.22	0.22	3
LONG RANGE AIRCRAFT						61
BOMBERS	0.15	0.19		0.17		26
- Backfire				0.17	0.17	26
MPA/ASW	0.41	0.39		0.40		36
- Bear F				0.40	0.40	36
THEATER BALLISTIC MISSILE	0.00	0.63	0.61	0.41		4
SUBMARINES						
SSBN - H II				0.41	0.60	4
SSB - G II				0.41	0.60	0
ATTACK SUBMARINES						15
SS	0.25	0.32	0.28	0.28		15
- K				0.28	0.28	4
- W				0.28	0.28	11

**TABLE V
NORTHERN FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
THEATER SURFACE						38
FF/FFL	0.29	0.27	0.23	0.26	0.26	38
- Koni				0.26	0.26	0
- Riga				0.26	0.26	5
- Petya III				0.26	0.26	1
- Mod Petya II				0.26	0.26	0
- Petya II				0.26	0.26	3
- Mod Petya I				0.26	0.26	2
- Petcha I				0.26	0.26	1
- Mirka II				0.26	0.26	2
- Mirka I				0.26	0.26	2
- Parchim II				0.26	0.26	3
- Grisha V				0.26	0.26	3
- Grisha IV				0.26	0.26	0
- Grisha III				0.26	0.26	8
- Grisha II				0.26	0.26	3
- Grisha I				0.26	0.26	4
PATROL COMBATANTS						13
With Missiles						7
PGG		0.07	0.10	0.08		7
- Dergach				0.08	0.08	0
- Utki				0.08	0.08	1
- Tarantul III				0.08	0.08	1
- Tarantul II				0.08	0.08	2
- Tarantul I				0.08	0.08	0
- Nanuchka IV				0.08	0.08	0
- Nanuchka III				0.08	0.08	1
- Nanuchka I				0.08	0.08	1
PPG		0.07	0.10	0.08		0
- Sarancha				0.08	0.08	0
Without missiles						6
PG		0.07	0.10	0.08		6
- Pauk				0.08	0.08	3
- Poti				0.08	0.08	4
- Svetlak				0.08	0.08	0

TABLE V
NORTHERN FLEET FORCES

	Combat	Jane's	IIS	Avg.	Assumed	Assumed #
MINE WARFARE						43
MSF		0.17	0.20	0.18		20
- Gorya				0.18	0.18	0
- Natya II				0.18	0.18	0
- Natya I				0.18	0.18	6
- Yurka				0.18	0.18	8
- T-43				0.18	0.18	5
MSC		0.17	0.20	0.18		23
- Andryusha				0.18	0.18	0
- Baltika				0.18	0.18	0
- Sasha				0.18	0.18	0
- Sonya				0.18	0.18	12
- Vanya				0.18	0.18	10
- Mod Vanya				0.18	0.18	1
- Zhenya				0.18	0.18	0
AMPHIBIOUS						7
LSM		0.16	0.19	0.18		7
- Polnochny (180 troops)				0.18	0.18	7
THEATER AIRCRAFT						124
BOMBERS	0.14	0.19		0.17		34
- Badger				0.17	0.17	30
- Blinder				0.17	0.17	4
FIGHTER-BOMBERS	0.18	0.19		0.19		30
- Fitter				0.19	0.17	13
- Forger				0.19	0.17	17
MPA/ASW	0.41	0.39		0.40		60
- Mail				0.40	0.40	40
- May				0.40	0.40	20

**TABLE VI
PACIFIC FLEET FORCES**

	Combat	Jane's	IJSS	Avg	Assumed	Assumed #
STRATEGIC-MISSILE SUBMARINES						24
SSBN	0.38	0.37	0.39	0.38		24
- Typhoon				0.38	0.38	2
DELTA/YANKEE					0.38	22
- Delta IV				0.38	0.38	2
- Delta III				0.38	0.38	5
- Delta II				0.38	0.38	2
- Delta I				0.38	0.38	7
- Yankee II				0.38	0.38	0
- Yankee I				0.38	0.38	5
- Hotel III				0.38	0.38	0
STRIKE SUBMARINES						91
CRUISE-MISSILE ATTACK SUBMARINES						33
SSGN	0.57	0.54	0.59	0.57		28
- Yankee				0.57	0.57	1
- Papa				0.57	0.57	1
- Charlie II				0.57	0.57	3
- Charlie I				0.57	0.57	5
- Oscar II				0.57	0.57	2
- Oscar I				0.57	0.57	1
- Echo I				0.57	0.57	15
SSG	0.43	0.31	0.36	0.37		5
- Juliett				0.37	0.37	5
FLEET ATTACK SUBMARINES						58
SSN	0.63	0.69	0.62	0.64		42
- Akula				0.64	0.64	3
- Sierra				0.64	0.64	1
- Alpha				0.64	0.64	3
- Victor III				0.64	0.64	15
- Victor II				0.64	0.64	4
- Victor I				0.64	0.64	10
- Yankee (notch)				0.64	0.64	1
- November				0.64	0.64	3

**TABLE VI
PACIFIC FLEET FORCES**

	Combat	Jane's	IJSS	Avg	Assumed	Assumed #
SS	0.25	0.32	0.28	0.28		16
- Foxtrot				0.28	0.28	11
- Tango				0.28	0.28	5
SURFACE STRIKE						10
CV	0.25	0.00	0.25	0.17		0
- Tbilisi				0.17	0.17	0
CVHG	0.33	0.50	0.50	0.44		2
- Kiev				0.44	0.50	2
- Baku				0.44	0.50	1
CGN	0.10	0.33		0.14		1
- Kirov				0.14	0.33	1
CG	0.33	0.36	0.43	0.37		4
- Slava				0.37	0.37	1
- Kresta I				0.37	0.37	1
- Kynda				0.37	0.37	1
CC/CL		0		0.00		0
- Sverdlov				0.00	0.00	0
DDG	0.25	0.31	0.27	0.27		3
- Sovremenny				0.27	0.27	3
SURFACE ASW						9
CHG	0.33	0.33	0.33	0.33		0
- Moskva				0.33	0.00	0
CG	0.33	0.36	0.43	0.37	0.37	6
- Kara				0.37	0.37	3
- Kresta II				0.37	0.37	4
DDG	0.25	0.31	0.27	0.27		3
- Udaloy				0.27	0.27	3
SURFACE ESCORTS						19
DDG	0.25	0.31	0.27	0.27		5
- Kilden DD w SSM				0.27	0.27	0
- Kashin w SSM				0.27	0.27	1
- Kashin				0.27	0.27	3
- Kanin				0.27	0.27	0

**TABLE VI
PACIFIC FLEET FORCES**

	Combat	Jane's	IISS	Avg	Assumed	Assumed #
FFG	0.21	0.24	0.71	0.39		15
- Krivak III				0.39	0.39	2
- Krivak II				0.39	0.39	4
- Krivak I				0.39	0.39	8
- Balcom				0.39	0.39	0
MINE WARFARE						30
MCS		0.17	0.20	0.18		1
- Alesha				0.18	0.18	1
- Gorya				0.18	0.18	0
MCM - Polnochny A @ B				0.18	0.18	10
MSF				0.18		19
- Natya II				0.18	0.18	0
- Natya I				0.18	0.18	6
- Yurka				0.18	0.18	8
- T 43 Class				0.18	0.18	5
AMPHIBIOUS						9
LPD		1.00	0.19	0.60		0
- Ivan Rogov (522 troops)				0.60	0.10	0
LST		0.24	0.19	0.22		8
- Ropucham (225 troops)				0.22	0.22	5
- Alligator (300 troops)				0.22	0.22	3
LONG RANGE AIRCRAFT						72
BOMBERS	0.33	0.33		0.22		50
- Backfire				0.22	0.33	50
MPA/ASW	0.37	0.39		0.25	0.25	23
- Bear F					0.25	23
THEATER BALLISTIC MISSILE		0.63	0.61	0.62		4
SUBMARINES						
SSBN - H II				0.62	0.62	4
SSB - G II				0.62	0.62	0
ATTACK SUBMARINES						15
SS	0.25	0.32	0.28	0.28		15
- K				0.28	0.28	4
- W				0.28	0.28	11

**TABLE VI
PACIFIC FLEET FORCES**

	Combat	Jane's	IIS	Avg	Assumed	Assumed #
THEATER SURFACE						23
FF/FFL	0.29	0.27	0.23	0.26	0.26	23
- Koni				0.26	0.26	0
- Riga				0.26	0.26	5
- Petya III				0.26	0.26	1
- Mod Petya II				0.26	0.26	0
- Petya II				0.26	0.26	3
- Mod Petya I				0.26	0.26	2
- Petcha I				0.26	0.26	1
- Mirka II				0.26	0.26	2
- Mirka I				0.26	0.26	2
- Parchim II				0.26	0.26	3
- Grisha V				0.26	0.26	3
- Grisha IV				0.26	0.26	0
- Grisha III				0.26	0.26	8
- Grisha II				0.26	0.26	3
- Grisha I				0.26	0.26	4
PATROL COMBATANTS						13
With Missiles						6
PGG		0.07	0.10	0.08		6
- Dergach				0.08	0.08	0
- Utki				0.08	0.08	
- Tarantul III				0.08	0.08	1
- Tarantul II				0.08	0.08	2
- Tarantul I				0.08	0.08	0
- Nanuchka IV				0.08	0.08	0
- Nanuchka III				0.08	0.08	1
- Nanuchka I				0.08	0.08	1
PPGH		0.07	0.10	0.08		0
- Sarancha				0.08	0.08	0

**TABLE VI
PACIFIC FLEET FORCES**

	Combat	Jane's	IISS	Avg	Assumed	Assumed #
Without missiles						7
PG		0.07	0.10	0.08		6
- Pauk				0.08	0.08	3
- Poti				0.08	0.08	4
- Svetlak				0.08	0.08	0
PGF - T-58		0.07	0.10	0.06	0.06	1
MINE WARFARE						43
MSF		0.17	0.20	0.18		20
- Gorya				0.18	0.18	0
- Natya II				0.18	0.18	0
- Natya I				0.18	0.18	6
- Yurka				0.18	0.18	8
- T-43				0.18	0.18	5
MSC		0.17	0.20	0.18		23
- Andryusha				0.18	0.18	0
- Baltika				0.18	0.18	0
- Sasha				0.18	0.18	0
- Sonya				0.18	0.18	12
- Vanya				0.18	0.18	10
- Mod Vanya				0.18	0.18	1
- Zhenya				0.18	0.18	0
AMPHIBIOUS						4
LSM		0.16	0.19	0.12		4
- Polnochny (180 troops)				0.12	0.17	4
THEATER AIRCRAFT						194
BOMBERS	0.33	0.33		0.33		66
- Badger				0.33	0.33	57
- Blinder				0.33	0.33	8
FIGHTER-BOMBERS	0.49	0.33		0.41		71
- Fitter				0.41	0.33	30
- Forger				0.41	0.33	41
MPA/ASW	0.37	0.39		0.38		57
- Mail				0.38	0.38	38
- May				0.38	0.38	19

**TABLE VII
BLACK SEA FLEET FORCES**

	Combat	Jane's	IIS	Avg.	Assumed	Assumed #
STRATEGIC-MISSILE SUBMARINES						0
SSBN	0.00	0.00	0.00	0.00		0
- Typhoon				0.00	0.00	0
DELTA/YANKEE					0.00	0
- Delta IV				0.00	0.00	0
- Delta III				0.00	0.00	0
- Delta II				0.00	0.00	0
- Delta I				0.00	0.00	0
- Yankee II				0.00	0.00	0
- Yankee I				0.00	0.00	0
- Hotel III				0.00	0.00	0
STRIKE SUBMARINES						9
CRUISE-MISSILE ATTACK SUBMARINES						2
SSGN	0.00	0.00	0.00	0.00		0
- Yankee				0.00	0.00	0
- Papa				0.00	0.00	0
- Charlie II				0.00	0.00	0
- Charlie I				0.00	0.00	0
- Oscar II				0.00	0.00	0
- Oscar I				0.00	0.00	0
- Echo I				0.00	0.00	0
SOG	0.14	0.13	0.14	0.14		2
- Juliet				0.14	0.14	2
FLEET ATTACK SUBMARINES						9
SSN	0.00	0.00	0.00	0.00		0
- Akula				0.00	0.00	0
- Sierra				0.00	0.00	0
- Alpha				0.00	0.00	0
- Victor III				0.00	0.00	0
- Victor II				0.00	0.00	0
- Victor I				0.00	0.00	0
- Yankee (notch)				0.00	0.00	0
- November				0.00	0.00	0

**TABLE VII
BLACK SEA FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
SSG	0.18	0.16	0.14	0.16		9
- Foxtrot				0.16	0.16	6
- Tango				0.16	0.16	3
SURFACE STRIKE						7
CV	0.00	0.00	0.00	0.00		0
- Tbilisi				0.00	0.00	0
CVHG	0.33	0.25	0.25	0.28		1
- Kiev				0.28	0.28	1
- Baku				0.28	0.28	0
CGN	0.23	0.00		0.12		0
- Kirov				0.12	0.00	0
CG	0.23	0.21	0.19	0.21		2
- Slava				0.21	0.21	1
- Kresta I				0.21	0.21	1
- Kynda				0.21	0.21	1
CC/CL		0.00		0.00		0
- Sverdlov				0.00	0.00	0
DDG	0.30	0.23	0.37	0.30		4
- Sovremenny				0.30	0.30	4
SURFACE ASW						7
CHG	0.33	1.00		0.67		0
- Moskva				0.67	0.10	0
CG	0.23	0.21	0.19	0.21		4
- Kara				0.21	0.21	1
- Kresta II				0.21	0.21	2
DDG	0.30	0.23	0.37	0.30		3
- Udaloy				0.30	0.30	3
SURFACE ESCORTS						15
DDG	0.30	0.23	0.37	0.30		5
- Kilden DD w SSM				0.30	0.30	0
- Kashin w SSM				0.30	0.30	1
- Kashin				0.30	0.30	4
- Kanin				0.30	0.30	0

**TABLE VII
BLACK SEA FLEET FORCES**

	Combat	Jane's	IIS	Avg.	Assumed	Assumed #
FPG	0.30	0.24	0.73	0.43		10
- Krivak III				0.43	0.27	1
- Krivak II				0.43	0.27	3
- Krivak I				0.43	0.27	6
- Balcom				0.43	0.27	0
MINE WARFARE						23
MCS		0.22	0.19	0.20		1
- Alesha				0.20	0.20	1
- Gorya				0.20	0.20	0
MCM - Polnochny A @ B		0.22	0.19	0.20	0.20	1
MSF		0.22	0.19	0.20		22
- Natya II				0.20	0.20	0
- Natya I				0.20	0.20	7
- Yurka				0.20	0.20	9
- T 43 Class				0.20	0.20	6
AMPHIBIOUS						8
LPD		0.00	0.19	0.10		0
- Ivan Rogov (522 troops)				0.10	0.00	0
LST		0.21	0.19	0.20		8
- Ropucha (225 troops)				0.20	0.20	5
- Alligator (300 troops)				0.20	0.20	3
LONG RANGE AIRCRAFT						65
BOMBERS	0.26	0.29		0.27		41
- Backfire				0.27	0.27	41
MPA/ASW	0.12	0.13		0.13		24
- Bear F				0.13	0.27	24
THEATER BALLISTIC MISSILE SUBMARINES						0
SSBN - H II		0.00	0.00	0.00	0.00	0
SSB - G II				0.00	0.00	0
ATTACK SUBMARINES						9
SS	0.18	0.16	0.14	0.16		9
- K				0.16	0.16	2
- W				0.16	0.16	7

**TABLE VII
BLACK SEA FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
THEATER SURFACE						36
FF/FFL		0.27	0.24	0.25		36
- Koni				0.25	0.25	0
- Riga				0.25	0.25	5
- Petya III				0.25	0.25	1
- Mod Petya II				0.25	0.25	0
- Petya II				0.25	0.25	3
- Mod Petya I				0.25	0.25	2
- Petcha I				0.25	0.25	1
- Mirka II				0.25	0.25	2
- Mirka I				0.25	0.25	2
- Parchim II				0.25	0.25	3
- Grisha V				0.25	0.25	3
- Grisha IV				0.25	0.25	0
- Grisha III				0.25	0.25	8
- Grisha II				0.25	0.25	3
- Grisha I				0.25	0.25	4
PATROL COMBATANTS						24
With Missiles						11
PGG		0.09	0.20	0.15		11
- Dergach				0.15	0.15	0
- Utka				0.15	0.15	
- Tarantul III				0.15	0.15	2
- Tarantul II				0.15	0.15	3
- Tarantul I				0.15	0.15	0
- Nanuchka IV				0.15	0.15	0
- Nanuchka III				0.15	0.15	2
- Nanuchka I				0.15	0.15	3
PPGH		0.09	0.20	0.15		0
- Sarancha				0.15	0.15	0
Without missiles						14
PG		0.09	0.20	0.15		12
- Pauk				0.15	0.15	5
- Poti				0.15	0.15	7
- Svetlak				0.15	0.15	0

**TABLE VII
BLACK SEA FLEET FORCES**

	Combat	Jane's	ISS	Avg.	Assumed	Assumed #
PGF - T-58		0.09	0.20	0.15	0.15	2
MINE WARFARE						48
MSF		0.22	0.19	0.20		22
- Gorya				0.20	0.20	0
- Natya II				0.20	0.20	0
- Natya I				0.20	0.20	7
- Yurka				0.20	0.20	9
- T-43				0.20	0.20	6
MSC		0.22	0.19	0.20		26
- Andryusha				0.20	0.20	0
- Baltika				0.20	0.20	0
- Sasha				0.20	0.20	0
- Sonya				0.20	0.20	13
- Vanya				0.20	0.20	11
- Mod Vanya				0.20	0.20	1
- Zhenya				0.20	0.20	0
AMPHIBIOUS						14
LSM	0.47	0.19	0.38	0.35		14
- Polnochny (180 troops)				0.38	0.38	14
THEATER AIRCRAFT						126
BOMBERS		0.29		0.29		58
- Badger				0.29	0.29	51
- Blinder				0.29	0.29	7
FIGHTER-BOMBERS	0.26	0.29		0.28		49
- Fitter				0.28	0.28	21
- Forger				0.28	0.28	28
MPA/ASW	0.12	0.13		0.13		20
- Mail				0.13	0.13	13
- May				0.13	0.13	7

**TABLE VIII
BALTIC FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
STRATEGIC-MISSILE SUBMARINES						21
SSBN	0.00	0.00	0.00	0.00		0
- Typhoon				0.00	0.00	0
DELTA/YANKEE					0.00	0
- Delta IV				0.00	0.00	0
- Delta III				0.00	0.00	0
- Delta II				0.00	0.00	0
- Delta I				0.00	0.00	0
- Yankee II				0.00	0.00	0
- Yankee I				0.00	0.00	0
- Hotel III				0.00	0.00	0
STRIKE SUBMARINES						21
CRUISE-MISSILE ATTACK SUBMARINES						4
SSGN	0.00	0.00	0.00	0.00		0
- Yankee				0.00	0.00	0
- Papa				0.00	0.00	0
- Charlie II				0.00	0.00	0
- Charlie I				0.00	0.00	0
- Oscar II				0.00	0.00	0
- Oscar I				0.00	0.00	0
- Echo I				0.00	0.00	0
SSG	0.21	0.31	0.29	0.27		4
- Juliett				0.27	0.27	4
FLEET ATTACK SUBMARINES						17
SSN	0.00	0.00	0.00	0.00		0
- Akula				0.00	0.00	0
- Sierra				0.00	0.00	0
- Alpha				0.00	0.00	0
- Victor III				0.00	0.00	0
- Victor II				0.00	0.00	0
- Victor I				0.00	0.00	0
- Yankee (notch)				0.00	0.00	0
- November				0.00	0.00	0

**TABLE VIII
BALTIC FLEET FORCES**

	Combat	Jane's	IJSS	Avg.	Assumed	Assumed #
SS	0.30	0.28	0.32	0.30		17
- Foxtrot				0.30	0.30	12
- Tango				0.30	0.30	5
SURFACE STRIKE						5
CV	0.00	0.00	0.00	0.00		0
- Tbilisi				0.00	0.00	0
CVHG	0.00	0.00	0.00	0.00		0
- Kiev				0.00	0.00	0
- Baku				0.00	0.00	0
CGN	0.10	0.33		0.22		1
- Kirov				0.22	0.33	1
CG	0.10	0.04	0.14	0.09		1
- Slava				0.09	0.09	0
- Kresta I				0.09	0.09	0
- Kynda				0.09	0.09	0
CC/CL		0.33		0.33		1
- Sverdlov				0.33	0.33	1
DDG	0.18	0.21	0.17	0.18		2
- Sovremenny				0.18	0.18	2
SURFACE ASW						4
CHG	0.00	0.00		0.00		0
- Moskva				0.00	0.00	0
CG	0.10	0.04	0.14	0.09		2
- Kara				0.09	0.09	1
- Kresta II				0.09	0.09	1
DDG	0.18	0.21	0.17	0.18		2
- Udaloy				0.18	0.18	2
SURFACE ESCORTS						11
DDG	0.18	0.21	0.17	0.18		3
- Kilden DD w SSM				0.18	0.18	0
- Kashin w SSM				0.18	0.18	1
- Kashin				0.18	0.18	2
- Kanin				0.18	0.18	0

**TABLE VIII
BALTIC FLEET FORCES**

	Combat	Jane's	IJSS	Avg.	Assumed	Assumed #
FFG	0.21	0.18	0.60	0.33		8
- Krivak III				0.33	0.20	1
- Krivak II				0.33	0.20	2
- Krivak I				0.33	0.20	4
- Balcom				0.33	0.20	0
MINE WARFARE						41
MCS		0.34	0.36	0.35	0.35	1
- Alesha				0.35	0.35	1
- Gorya				0.35	0.35	0
MCM - Polnochny A @ B		0.34	0.36	0.35	0.35	1
MSF		0.34	0.36	0.35		38
- Natya II				0.35	0.35	0
- Natya I				0.35	0.35	12
- Yurka				0.35	0.35	15
- T 43 Class				0.35	0.35	11
AMPHIBIOUS						9
LPD		0.00	0.27	0.14		0
- Ivan Rogov (522 troops)				0.14	0.00	0
LST		0.21	0.27	0.24		9
- Ropucha (225 troops)				0.24	0.24	6
- Alligator (300 troops)				0.24	0.24	3
LONG RANGE AIRCRAFT						38
BOMBERS	0.26	0.19		0.23		30
- Backfire				0.23	0.20	30
MPA/ASW	0.10	0.09		0.23		8
- Bear F				0.23	0.09	8
THEATER BALLISTIC MISSILE SUBMARINES						0
SSBN - H II	0.00	0.00	0.00	0.00	0.00	0
SSB - G II	0.50		1.00	0.75	0.00	0
ATTACK SUBMARINES						17
SS	0.30	0.28	0.32	0.30		17
- K				0.30	0.30	4
- W				0.30	0.30	12
THEATER SURFACE						28

**TABLE VIII
BALTIC FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
FF/FFL	0.19	0.19	0.20	0.19		28
- Koni				0.19	0.19	0
- Riga				0.19	0.19	4
- Petya III				0.19	0.19	0
- Mod Petya II				0.19	0.19	0
- Petya II				0.19	0.19	2
- Mod Petya I				0.19	0.19	2
- Petcha I				0.19	0.19	1
- Mirka II				0.19	0.19	2
- Mirka I				0.19	0.19	1
- Parchim II				0.19	0.19	2
- Grisha V				0.19	0.19	2
- Grisha IV				0.19	0.19	0
- Grisha III				0.19	0.19	6
- Grisha II				0.19	0.19	2
- Grisha I				0.19	0.19	3
PATROL COMBATANTS						41
With Missiles						18
PGG		0.13	0.38	0.25		18
- Dergach				0.25	0.25	0
- Utka				0.25	0.25	
- Tarantul III				0.25	0.25	4
- Tarantul II				0.25	0.25	5
- Tarantul I				0.25	0.25	1
- Nanuchka IV				0.25	0.25	0
- Nanuchka III				0.25	0.25	4
- Nanuchka I				0.25	0.25	4
PPGH		0.13	0.38	0.25		0
- Sarancha				0.25	0.25	0
Without missiles						23
PG		0.13	0.38	0.25		19
- Pauk				0.25	0.25	8
- Poti				0.25	0.25	11
- Svetlak				0.25	0.25	0
PGF		0.13	0.38	0.25	0.25	4
- T-58						

**TABLE VIII
BALTIC FLEET FORCES**

	Combat	Jane's	IISS	Avg.	Assumed	Assumed #
MINE WARFARE						167
MSF		0.34	0.36	0.35		121
- Gorya				0.35	0.35	83
- Natya II				0.35	0.35	0
- Natya I				0.35	0.35	12
- Yurka				0.35	0.35	15
- T-43				0.35	0.35	11
MSC		0.34	0.36	0.35		46
- Andryusha				0.35	0.35	1
- Baltika				0.35	0.35	0
- Sasha				0.35	0.35	1
- Sonya				0.35	0.35	23
- Vanya				0.35	0.35	19
- Mod Vanya				0.35	0.35	1
- Zhenya				0.35	0.35	1
AMPHIBIOUS						10
LSM		0.23	0.27	0.25		10
- Polnochny (180 troops)				0.25	0.25	10
THEATER AIRCRAFT						74
BOMBERS	0.26	0.19		0.23		40
- Badger				0.23	0.20	35
- Blinder				0.13	0.20	5
FIGHTER-BOMBERS	0.33	0.19		0.26		20
- Fitter				0.26	0.20	20
- Forger				0.26	0.20	0
MPA/ASW	0.10	0.09		0.09		14
- Mail				0.09	0.09	9
- May				0.09	0.09	5

V. SOVIET NAVAL DEPLOYMENTS

To accurately reflect the forces available in each of the Soviet Fleets it is necessary to account for those units that are forward deployed. Soviet naval deployments have greatly reduced in number since the writing of Prof. Tritten's book. Some sources suggest as much as 20-30% of 1985 levels. In constructing this table we make two basic assumptions. First, that future force structure will be based on the idea of "defensive defense," and second that 1985 deployment levels were lower than 1982 levels.⁵

Even with a strictly defensive doctrine, the Soviet Navy will maintain some of its deployments simply to show the flag or as a show of force in areas such as the Persian Gulf where they have interests. For this reason we have adopted the traditional deployment areas of the Soviets and from Prof. Tritten's data base shown the 1982 levels. To this number, we apply a percentage in this case we have chosen 50%. The result is given in the column titled "Present level." The user who disagrees with this percentage may simply change the formula to see how this affects the result.⁶

⁵ *Ibid.*, pp. 26-29.

⁶ various sources

The deployment areas are:

1. Atlantic
2. Pacific
3. Mediterranean
4. Indian Ocean
5. South China Sea
6. West Africa Patrol
7. Caribbean Sea
8. Caspian Sea

The data is presented here in two tables. First, the number of units deployed is assessed by area of deployment. The next table shows the impact of these deployments on the various fleets. In the first table, there is a column called assumed number. Again this column must be input by the user. It is the number that is used to calculate the impact to the individual fleets. It is the summations of the unit types in this table that are used in subsequent calculations.

Because the Soviet Union is pulling back we have further assumed that the Indian Ocean deployment will be limited to submarine forces. This is not to say that there will be no surface ships in this area, but that deployed Pacific Fleet units will occasionally frequent the area. We also assume no deployment to South China Sea, West Africa Patrol, Caribbean and Caspian. These will be picked up by occasional visits from major deployment areas.

**TABLE IX
SOVIET NAVY FORWARD DEPLOYMENTS**

Location	83 Level	Present Level	Assumed Number	Assumed Home Fleet
Atlantic Ocean				
STRATEGIC SUBMARINES		3	3	
SSBN (Typhoon)	2	1	1	Northern
SSBN (Delta/Yankee)	3	2	2	Northern
STRIKE SUBMARINES		2	2	
SSGN/SSG	1	1	1	Northern
SSN/SS	2	1	1	Northern
ATTACK SUBMARINES - SSN/SS	13	7	6	Northern
SURFACE STRIKE	2	1	2	Northern
SURFACE ESCORTS	3	2	2	Baltic
AMPHIBIOUS SHIPS	1	1	1	Baltic
Pacific Ocean				
STRATEGIC SUBMARINES		1	2	
SSBN (Typhoon)	1	1	1	Pacific
SSBN (Delta/Yankee)	1	1	1	Pacific
STRIKE SUBMARINES		2	2	
SSGN/SSG	1	1	1	Pacific
SSN/SS	2	1	1	Pacific
ATTACK SUBMARINES - SSN/SS	2	1	1	Pacific
SURFACE STRIKE	1	1	1	Pacific
SURFACE ASW	1	1	1	Pacific
SURFACE ESCORTS	1	1	1	Pacific
AMPHIBIOUS SHIPS	1	1	1	Pacific
MINESWEEPERS	1	1	1	Pacific
Mediterranean Sea				
STRIKE SUBMARINES		2	2	
SSGN/SSG	3	2	2	Northern
ATTACK SUBMARINES - SSN/SS	10	5	5	Northern
SURFACE STRIKE	4	2	2	Black Sea
SURFACE ASW	5	3	3	Black Sea

**TABLE IX
SOVIET NAVY FORWARD DEPLOYMENTS**

Location	83 Level	Present Level	Assumed Number	Assumed Home Fleet
SURFACE ESCORTS	5	3	3	Black Sea
AMPHIBIOUS SHIPS	3	2	2	Black Sea
MINESWEEPERS	3	2	2	Black Sea
PATROL SHIPS	2	1	1	Black Sea
Indian Ocean				
STRIKE SUBMARINES		1	2	
SSGN/SSG	1	1	1	Pacific
SSN/SS	1	1	1	Pacific
SURFACE STRIKE	1	1	0	Pacific
SURFACE ASW	2	1	0	Pacific
SURFACE ESCORTS	2	1	0	Pacific
AMPHIBIOUS SHIPS	2	1	0	Pacific
MINESWEEPERS	1	1	0	Pacific
THEATER RANGE AIRCRAFT	SOME			Black Sea
South China Sea				
ATTACK SUBMARINES - SSN/SS	7	4	2	Pacific
SURFACE STRIKE	1	1	1	Pacific
SURFACE ASW	3	2	1	Pacific
SURFACE ESCORTS	2	1	1	Pacific
MINESWEEPERS	1	1	1	Pacific
LONG RANGE AIRCRAFT	4	2	2	Pacific
West Africa Patrol				
SURFACE ESCORTS	1	1	0	Baltic Sea
AMPHIBIOUS	1	1	0	Baltic Sea
LONG RANGE AIRCRAFT	SOME			Northern
Caribbean Sea				
SUBMARINES	1	1	0	Northern or Baltic
SURFACE STRIKE	1	1	0	Northern or Baltic

TABLE IX
SOVIET NAVY FORWARD DEPLOYMENTS

Location	83 Level	Present Level	Assumed Number	Assumed Home Fleet
SURFACE ASW	1	1	0	Northern or Baltic
SURFACE ESCORTS	1	1	0	Northern or Baltic
LONG RANGE AIRCRAFT	SOME			Northern or Baltic
Caspian Sea				
SUBMARINES	SOME			Black Sea
SURFACE ESCORTS	SOME			Black Sea
MINESWEEPERS	2	1	0	Black Sea
OTHERS	UNKNOWN			Black Sea
Unknown/Various				
SUBMARINES	UNKNOWN			Baltic
SURFACE STRIKE	1	1	0	Black Sea
SURFACE ASW	SOME			Black Sea
SURFACE ESCORTS	SOME			Black Sea

TABLE X
IMPACT OF FORWARD DEPLOYMENTS/TRANSIT FORCES

Home Fleet	Type Unit	Number	Deployed Location
Northern	SSBN (Typhoon)	0	Atlantic
	SSBN (Delta/Yankee)	3	Atlantic
	SSGN/SSG	2	Atlantic
	SSGN/SSG	0	Mediterranean
	SSN/SS	2	Mediterranean
	SSN/SS	2	Atlantic
	SSN/SS	1	Atlantic
	SSN/SS	0	Caribbean
	SURFACE STRIKE	2	Atlantic

TABLE X
IMPACT OF FORWARD DEPLOYMENTS/TRANSIT FORCES

Home Fleet	Type Unit	Number	Deployed Location
	SURFACE ASW		Atlantic
	SURFACE ESCORTS	1	Atlantic
	Various	unknown	unknown
	Long Range Aircraft		
	MPA/ASW	0	West Africa/Caribbean
Pacific	SSBN (Typhoon)	0	Pacific
	SSBN (Delta/Yankee)	2	Pacific
	SSGN/SSG	1	Pacific
	SSGN/SSG	0	Indian Ocean
	SSN/SS	2	Pacific
	SSN/SS	1	Pacific
	SSN/SS	2	Indian Ocean
	SSN/SS	0	South China Sea
	SURFACE STRIKE	1	Pacific
	SURFACE STRIKE	1	Indian Ocean
	SURFACE STRIKE	0	South China Sea
	SURFACE ASW	1	Pacific
	SURFACE ASW	1	Indian Ocean
	SURFACE ASW	2	South China Sea
	SURFACE ESCORTS	1	Pacific
	SURFACE ESCORTS	0	Indian Ocean
	SURFACE ESCORTS	1	South China Sea
	AMPHIBIOUS	1	Pacific
	AMPHIBIOUS	0	Indian Ocean
	MINESWEEPERS	1	Pacific
	MINESWEEPERS	0	Indian Ocean
	MINESWEEPERS	1	South China Sea
	LONG RANGE AIRCRAFT	1	South China Sea
Black Sea	SUBMARINES	unknown	unknown
	SURFACE STRIKE	2	Mediterranean
	SURFACE STRIKE	0	unknown

TABLE X
IMPACT OF FORWARD DEPLOYMENTS/TRANSIT FORCES

Home Fleet	Type Unit	Number	Deployed Location
	SURFACE ASW	5	Mediterranean
	SURFACE ASW	0	unknown
	SURFACE ESCORTS	2	Mediterranean
	SURFACE ESCORTS	0	Caspian Sea
	SURFACE ESCORT	0	unknown
	AMPHIBIOUS	3	Mediterranean
	MINESWEEPERS	3	Mediterranean
	MINESWEEPERS	0	Caspian
	PATROL COMBATANTS	2	Mediterranean
	THEATER AIRCRAFT	0	Indian Ocean
	OTHER	0	Caspian Sea
Baltic	SUBMARINES	0	unknown
	SURFACE ESCORTS	6	Atlantic
Baltic	SURFACE ESCORTS	0	West Africa Patrol
	SURFACE ESCORTS	0	Caribbean
	SURFACE STRIKE	0	Caribbean
	SURFACE ASW	0	Caribbean
	AMPHIBIOUS	1	Atlantic
	AMPHIBIOUS	0	West Africa Patrol
	LONG RANGE AIRCRAFT	0	Caribbean
	LST (260)	0	West Africa Patrol
	Various	0	Unknown

VI. CONTIGUOUS WATERS CAPABILITY

We now have all the elements to assess the Soviet Navy active contiguous water capability. It is important to keep in mind that these tables do not include the miscellaneous forces. This is a departure from Prof. Tritten's data base. Because Tritten's study was aimed at a total threat assessment, he needed to represent what amount of reserve and other units in temporary maintenance status were able to go to sea in war. In our study, we present a theoretical force structure for the Soviets and see how those needs are met with active forces. Our final assessment will supplement active forces from the miscellaneous forces if necessary or eliminate active and reserve, i.e. miscellaneous forces where a surplus is found.

Although miscellaneous forces are not accounted for in this table the basic idea is still the same as with Prof. Tritten's data base. He looked at two threat environments. One environment is a peace time situation with relatively good relations. The other is a higher alert environment in which tensions are high.

Within each threat environment, Prof. Tritten estimates two types of Soviet capabilities. One is the ability to strike with little warning called a rapid surge capability. And the other a mobilization capability, in which there may be several months to prepare. Again, though Prof. Tritten's study is geared toward assessing

offensive capability, these categories of threat level and conditions for sortie ability are equally applicable to a defensive role.⁷

The following table shows the percentages chosen to estimate the forces available in each situation. This is a Lotus table and is used to generate the Contiguous Water Capability Table. A total threat assessment must incorporate percentages for miscellaneous and reserve units. The contiguous water capability for each fleet is calculated by multiplying the raw number from Tables V through VIII by the percentage for the given threat level and capability desired, Table XI, and then subtracting the number of deployed units Table IX.

**TABLE XI
PERCENTAGES**

	Rapid Surge	Mobilization
Low	0.33	0.67
High	0.5	0.75

⁷ Tritten, *op. cit.*, pp. 36-37.

TABLE XII
NORTHERN FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
			Low	High	Low	High
STRATEGIC FORCES	8	3	0	1	2	3
Typhoon	4	1	0	1	1	2
Delta/Yankee	4	1	0	1	1	2
ACTIVE LONG-RANGE MARITIME FORCES						
STRIKE SUBMARINES	134	4	40	63	86	96
SSGN/SSG	33	1	10	16	21	24
SSN/SS	101	3	30	47	64	73
SURFACE STRIKE	9	2	3	5	6	7
CV	1		0	1	1	1
CVHG	0		0	0	0	0
CGN/CG	5		2	3	3	4
CC/CL	0		0	0	0	0
DDG	3		1	2	2	2
SURFACE ASW	9	0	3	5	6	7
CHG	0		0	0	0	0
CG/DDG	9		3	5	6	7
SURFACE ESCORTS	13	1	4	7	9	10
DDG/FFG	13		3	6	8	9
MINE WARFARE	21		7	10	14	16
MCS/MCM	1		0	1	1	1
MSF	19		6	10	13	15
AMPHIBIOUS	9		3	4	6	6
LPD (522)	0		0	0	0	0
LST (250 avg)	8		3	4	6	6
LONG RANGE AIRCRAFT	61	1	19	30	40	45
Bombers	26		8	13	17	19
MPA/ASW	36		12	18	24	27

TABLE XII
NORTHERN FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
ACTIVE THEATER MARITIME FORCES						
THEATER BALLISTIC MISSILE SUBS-SSBN	4		1	2	2	3
ATTACK SUBMARINES-SSN/SS	15	1	4	7	9	11
THEATER SURFACE	38		12	19	25	28
FF/FFL	38		12	19	25	28
PATROL COMBATANTS	7		2	3	5	5
PGG/PPGH	7		2	3	5	5
PG	6		2	3	4	5
MINE WARFARE	43		14	22	29	32
MSF	20		6	10	13	15
MSC	23		8	12	16	18
AMPHIBIOUS - LSM (180)	7		2	3	5	5
THEATER AIRCRAFT	124		41	62	83	93
Bombers	34		11	17	23	26
Fighter-Bombers	30		10	15	20	22
MPA/ASW	60		20	30	40	45

TABLE XIII
PACIFIC FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
			Low	High	Low	High
STRATEGIC FORCES	24	2	8	12	16	18
Typhoon	2	0	1	1	2	2
Delta/Yankee	22	2	6	10	13	15
ACTIVE LONG-RANGE MARITIME FORCES						
STRIKE SUBMARINES	91	4	30	45	61	68
SSGN/SSG	33	1	11	16	22	24
SSN/SS	58	3	18	27	37	41
SURFACE STRIKE	10	2	3	4	6	6
CV	0		0	0	0	0
CVHG	2		1	1	1	2
CGN	1		0	0	1	1
CG	4		1	2	3	3
CC/CL	0		0	0	0	0
DDG	3		1	2	2	2
SURFACE ASW	9	4	2	3	4	4
CHG	0		0	0	0	0
CG	6		2	3	4	5
DDG	3		1	1	2	2
SURFACE ESCORTS	19	2	6	9	12	13
DDG/FFG	19		6	10	13	15
MINE WARFARE	30	2	9	14	19	21
MCS/MCM	11		4	5	7	8
MSF	19		6	10	13	15
AMPHIBIOUS	9	1	3	4	5	6
LPD (522)	0		0	0	0	0
LST (230-300)	8		3	4	6	6

TABLE XIII
PACIFIC FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
LONG-RANGE AIRCRAFT	72	1	23	36	48	53
Bombers	50		16	25	33	37
MPA/ASW	23		7	11	15	17
ACTIVE THEATER MARITIME FORCES						
THEATER BALLISTIC MISSILE SUBS-SSBN	4		1	2	2	3
ATTACK SUBMARINES - SSN/SS	15	1	8	7	10	11
THEATER SURFACE	23		8	11	15	17
FF/FFL	23		8	11	15	17
PATROL COMBATANTS	13		4	6	9	10
PGG/PPGH	6		2	3	4	4
PG/PGF	7		2	4	5	5
MINE WARFARE	43		14	22	29	32
MSF	20		6	10	13	15
MSC	23		8	12	16	18
AMPHIBIOUS - LSM (180)	4		1	2	3	3
THEATER AIRCRAFT	194		64	97	130	145
Bombers	66		22	33	44	49
Fighter-Bombers	71		23	36	48	53
MPA/ASW	57		19	29	38	43

TABLE XIV
BLACK SEA FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No.	No. Out	Rapid Surge		Mobilization	
			Low	High	Low	High
STRATEGIC FORCES	0		0	0	0	0
Typhoon	0		0	0	0	0
Delta/Yankee	0		0	0	0	0
ACTIVE LONG-RANGE						
STRIKE SUBMARINES	9		3	5	6	7
SSGN/SSG	2		1	1	1	1
SSN/SS	9		3	5	6	7
SURFACE STRIKE	7	2	2	3	3	4
CV	0		0	0	0	0
CVHG	1		0	1	1	1
CGN	0		0	0	0	0
CG	2		1	1	2	2
CC/CL	0		0	0	0	0
DDG	0		0	0	0	0
SURFACE ASW	7	5	1	1	1	2
CHG	0		0	0	0	0
CG/DDG	7		2	3	5	5
SURFACE ESCORTS	15	2	4	7	9	10
DDG/FFG	15		5	8	10	12
MINE WARFARE	23	3	7	10	14	15
MCS/MCM	2		1	1	1	1
MSF	22		7	11	14	16
AMPHIBIOUS	8	3	2	2	3	3
LPD (522)	0		0	0	0	0
LST (300)	8		3	4	5	6

TABLE XIV
BLACK SEA FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No.	No. Out	Rapid Surge		Mobilization	
LONG-RANGE AIRCRAFT	65		21	32	43	48
Bombers	41		13	20	27	30
MPA/ASW	24		8	12	16	18
ACTIVE THEATER						
ATTACK SUBMARINES	0		0	0	0	0
ATTACK SUBMARINES-SS	9		3	4	6	7
THEATER SURFACE	36		12	18	24	27
FF/FFL	36		12	18	24	27
PATROL COMBATANTS	24	2	7	11	15	17
PGG/PPGH	11		4	5	7	8
PG/PGF	14		5	7	9	10
MINE WARFARE	48		16	24	32	36
MSF	22		7	11	15	16
MSC	26		9	13	17	20
AMPHIBIOUS - LSM (180)	14		5	7	10	11
THEATER AIRCRAFT	126	0	42	63	85	95
Bombers	58		19	29	39	44
Fighter-bombers	49		16	24	33	37
MPA/ASW	0		0	0	0	0

TABLE XV
BALTIC FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
			Low	High	Low	High
STRATEGIC FORCES	21		7	11	14	16
Typhoon	0		0	0	0	0
Delta/Yankee	0		0	0	0	0
ACTIVE LONG-RANGE MARITIME FORCES						
STRIKE SUBMARINES	21		7	11	14	16
SSGN-SSG	4		1	2	3	3
SSN/SS	17		6	9	12	13
SURFACE STRIKE	5	1	1	2	3	3
CV	0		0	0	0	0
CVHG	0		0	0	0	0
CGN/CG	2		1	1	1	1
CC/CL	1		0	0	1	1
DDG	2		1	1	1	2
SURFACE ASW	4	0	1	2	2	3
CHG	0		0	0	0	0
CG/DDG	4		1	2	2	3
SURFACE ESCORTS	11	7	1	2	2	3
DDG/FFG	11		4	5	7	8
MINE WARFARE	41		13	20	27	30
MCS/MCM	3		1	1	2	2
MSF	38		12	19	25	28
AMPHIBIOUS	9	1	3	4	5	6
LPD (552)	0		0	0	0	0
LST (250 avg)	9		3	5	6	7
LONG RANGE AIRCRAFT	38	1	12	19	25	28
Bombers	30		10	15	20	23
MPA/ASW	8		3	4	5	6

TABLE XV
BALTIC FLEET - CONTIGUOUS WATERS CAPABILITY

	Assumed No. Total	No. Out of Area	Rapid Surge Total Threat		Mobilization Total Threat	
ACTIVE THEATER MARITIME FORCES						
THEATER BALLISTIC MISSILE SUBS-SSBN	0		0	0	0	0
ATTACK SUBMARINES - SSN/SS	17	0	5	8	11	12
THEATER SURFACE	28		9	14	18	21
FF/FFL	28		9	14	18	21
PATROL COMBATANTS	41		13	20	27	31
PGG/PPGH	18		6	9	12	13
PG/PGF	23		8	12	15	17
MINE WARFARE	167		55	83	112	125
MSF	121		40	61	81	91
MSC	46		15	23	30	34
AMPHIBIOUS - LSM (180)	10		3	5	6	7
THEATER AIRCRAFT	74		24	37	49	55
Bombers	40		13	20	27	30
Fighter-Bombers	20		7	10	13	15
MPA/ASW	14		4	7	9	10

VII. FUTURE SOVIET FORCE STRUCTURE

The second part of the problem addresses the future structure of the Soviet Navy. This is a very difficult task because as far as we know the Soviets themselves do not know what this structure will be. In order to characterize their needs, we put ourselves in the position of the Soviet General Staff and ask what must we have under the new defensive doctrine and strategy.

We make many assumptions throughout this section. We feel that these are reasonable assumptions. For example, it is assumed that the Soviet units will act in task groups rather than as individual ships. This conforms to past behavior, it is the assumption made by Prof. Tritten in his data base and there is no reason to revise this assumption.⁸ A table outlining the character and make up of Soviet Task Groups follows.

TABLE XVI
NAVAL TASK GROUPS

Ballistic Missile Submarines	Individual units
Air Supplemented Anti-Carrier Warfare (ACW) Group	One CVHG or Bomber unit ^a One CGN/CG/major DDG Two DDG/FFG/DD/FF One SSGN/SSG (if available) Two SSN/SS (three if no SSGN/SSG)

⁸ *op. cit.*, pp. 59-62.

TABLE XVI
NAVAL TASK GROUPS

Ballistic Missile Submarines	Individual units
Air Supplemented Anti-Submarine Warfare (ASW) Group	One CVHG/CHG or MPA/ASW unit ^a One CGN/CG/major DDG Two DDG/FFG/DD/FF Three SSN/SS
ACW Group	Same as above less CVHG/bombers
ASW Group	Same as above less CVGH/CHG/ASW air
Submarine Warfare Group	Three SSGN/SSG/SSN/SS
Surface Action Group	1-2 CVHG/CHG/CGN/CG/major DDG/CL 3-4 DDG/FFG/DD/FF
Marine Amphibious Unit	1 CG/CL if available 3-4 DDG/FFG/DD/FF/FLL depending on CG/CL Sufficient Amphibious ships to land 1000 troops
Surface Group	4 DD/FF/FLL
Patrol/Coastal Combat Group	5 Patrol/Coastal Combatants with occasional larger unit or miscellaneous ship (AXT)
Minesweeping Group	5 mine warfare ships
Bomber Unit (Long-Range or Theater)	20 Aircraft. If theater, may include fighter-bombers as escorts
MPA/ASW Unit (Long-Range or Theater)	5 Aircraft. May have fighter escorts
Fighter-Bomber Unit (Theater)	20 Aircraft. No escorts required

To decide how many of each type of task group is necessary for the geographic fleets the nature of the Soviet Union's present and future situation is considered. Here we make several broad assumptions.

1. The changes in the Soviet Union are not only caused by economics but are also social and political.

2. Because of these changes and the poor state of the economy, major military reductions are likely. Therefore, their stated policy of defensive defense is genuine.
3. Being primarily a land power, military cuts will also and perhaps more severely affect the navy.
4. A war with the United States and/or NATO is not likely in the near future and there will be two years warning time in which to mobilize for such a war.
5. The break up of the Warsaw Pact means that there are more potential enemies on the Soviet border, for example Poland, Bulgaria, Romania and what was previously East Germany.
6. While the choke points around the Soviet Union make large numbers of units necessary for an offensive mission, they ease the requirements for accomplishing defensive goals.

In summary, the Soviet Union is in a situation where there is a real and vital need for defensive forces. In the foreseeable future, however, there is no immediate threat to the homeland from the United States, NATO or the border countries. A major war is not likely to result from some peripheral contingency operations as was feared during the height of the cold war and there will be a somewhat extended period of warning and indication prior to a major conflict. In the final analysis, the numbers assumed are arbitrary (the researcher's best estimate) and illustrative. If other readers have a better view, they should keep the logic and methodology, and substitute their own numbers.

Based upon the above assumptions, what would the Soviet General Staff have for priorities if told to make severe reductions? Reluctant to abandon the

Navy's blue water ambitions, we suggest, the General Staff would seek to achieve the following:

1. Protection for strategic forces.
2. Protect the borders and extend the air defense envelope.
3. Ability to protect the flank of the army as part of defensive defense such as tactical missions on the army's flank.
4. Maintain an anti-landing defense capability.
5. Ability to conduct tactical amphibious operations against little or no resistance on Soviet soil to show presence or if invited back by a former Warsaw Pact host.
6. Protect against smuggling, fishing rights violations and other such transgressions.
7. Maintain an adequately trained base from which to build up an offensive force if necessary.

To meet the above objectives the Northern and Pacific fleets would homeport the strategic and longer range forces while the Baltic and Black fleets would have regional goals. Again the forces required to meet an unexpected attack or to give us a rapid surge capability would be fewer than if there is a tension building phase before hostilities with a chance to mobilize. Considering all of the above we suggest a future Soviet Naval structure as shown in the Table XVII.

From Table XVII it is easy to calculate the number of Soviet Navy forces necessary to accomplish "defensive defense." We calculate the total number of forces required in the following manner. Since each ship type may appear in more

TABLE XVII
PROJECTED SOVIET FORCE REQUIREMENTS

Naval Task Groups	Components	# Per Group	Northern			Pacific			Black Sea			Baltic		
			Rapid Surge	Mobilization		Rapid Surge	Mobilization		Rapid Surge	Mobilization		Rapid Surge	Mobilization	
ANTI-CARRIER WARFARE GROUP (ACW)	- Strike Subs	2	0	1		0	1		0	1		0	0	
	- Surface Strike	1												
	- Surface ASW	1												
	- Attack Subs	1												
	- Theater Subs	1												
ANTI-SUBMARINE WARFARE GROUP (ASW)	- Strike Subs	0	1	2		1	1		0	1		1	1	
	- Surface Strike	1												
	- Surface ASW	2												
	- Surface Escorts	0												
	- Attack Subs	3												
	- Theater Surface	1												
SUBMARINE WARFARE GROUP (SWG)	- Strike Subs	2	2	4		2	4		1	2		1	2	
	- Attack Subs	1												
SURFACE ACTION GROUP	- Surface Strike	2	1	2		1	2		0	1		1	2	
	- Surface ASW	1												
	- Surface Escorts	2												
	- Theater Surface	2												
MARINE AMPHIBIOUS UNIT	- Amphibious	3	0	1		0	1		0	1		0	1	
	- Surface Strike	1												
	- Surface ASW	1												
	- Surface Escorts	1												
	- Theater Surface	2												
SURFACE GROUP	- Theater Surface	4	1	2		1	2		1	2		2	4	
PATROL/COASTAL COMBAT GROUP	- Patrol Ships	5	2	4		2	4		2	4		3	6	
MINE SWEEPING GROUP	- Mine Warfare Ships	5	3	6		3	6		3	6		4	8	
BOMBER UNIT	- Long Range	15	0.5	1		1	2		0.5	1		1	2	
	- Theater	5												
MPA ASW UNIT	- Long Range	3	1	2		2	4		1	2		2	4	
	- Theater	2												
FIGHTER-BOMBER UNIT	- Theater	20	0.5	1		1	2		0.5	1		1	2	

than one task group and the group appears in one or more of the fleets, the formulas are quite long for this process. The easiest way to explain this is by example. If we sum up the strike submarines, this will be the number of strike subs in an ACW group multiplied by the summation of the number of groups required for each fleet plus the number of subs in an ASW group times the summation of the number of ASW groups required for each fleet etc. Table XVIII is a summation of the required number of units to meet the mobilization threat.

TABLE XVIII
FORCED REQUIRED TO MEET MOBILIZATION THREAT

Strike Submarines	30
Surface Strike	31
Surface ASW	29
Surface Escorts	26
Mine Warfare	130
Amphibious	24
Long Range Air	126
Attack Subs	31
Theater Surface	49
Patrol Combatants	130
Theater Aircraft	174

Although Table XVIII shows the number of forces required for "defensive defense," these are only the numbers of ships required in contiguous waters — ready to fight. Since no navy deploys 100% of its force in contiguous waters, we need to add deployed units and the ships that are not deployable due to scheduled

and unscheduled overhaul and maintenance. Essentially, we reverse the success used to create Tables XII-XV.

We therefore calculate the total number needed in Table XIX with the mobilization scenario used to create the highest possible numbers for the Soviet Navy. The lesser threat of a rapid surge will be absorbed by these higher numbers.

TABLE XIX.
FORCE STRUCTURE BASED ON DEFENSIVE DEFENSE

Strike Submarines	51
Surface Strike	42
Surface ASW	36
Surface Escorts	33
Mine Warfare	194
Amphibious	18
Long Range Air	190
Attack Subs	46
Theater Surface	104
Patrol Combatants	194
Theater Aircraft	260

Having arrived at revised numbers required under "defense defense," we now sum up the totals currently available. We do this by summing the categories from the Total Force Tables V through VIII.

**TABLE XX
PRESENT ACTIVE FORCES**

Strike Submarines	191
Surface Strike	33
Surface ASW	30
Surface Escorts	55
Mine Warfare	355
Amphibious	79
Long Range Air	225
Attack Subs	72
Theater Surface	679
Patrol Combatants	256
Theater Aircraft	478

The excess forces in the Soviet Navy under "defense defense" are simply what they have now (Table XX) minus what they need (Table XIX). The result is contained in Table XXI.

**TABLE XXI
EXCESS FORCES**

Strike Submarines	140
Surface Strike	-9
Surface ASW	-6
Surface Escorts	22
Mine Warfare	161
Amphibious	61
Long Range Air	35
Attack Subs	26
Theater Surface	575
Patrol Combatants	62
Theater Aircraft	218

VIII. RESULTS AND CONCLUSIONS

There are three main areas of concern with regard to naval arms control strategy. These are strategic forces, the Soviet aircraft carrier program and the non-strategic forces. Before summarizing our conclusions concerning naval arms control strategy, let us again emphatically state that we do not advocate naval arms control as being in the best interest of the United States. If anything, the likelihood that the Soviet Union will reduce its naval force structure due to internal pressures suggests that we may have little to gain. But if we are, however reluctantly, required to negotiate naval arms control treaties with the Soviets, the above methodology is useful in identifying the excess that can be targeted by the United States.

For the Soviets, naval strategic forces equates to SSBNs. Because the Soviets view the SSBN force in this manner, limitations upon these ships can not be considered without linking them to total numbers of nuclear warheads. A year ago it was evident that large reductions in the world nuclear arsenal would occur. Now it is clear that these cutbacks will be more severe than anyone predicted. With the USSR accepting 6,000 strategic nuclear warheads under START, one's first idea may be to assume a 50/50 distribution of those warheads between land based and sea based. With the breakup of the Soviet Union though, it is clear that the Kremlin has two problems. First, the Soviet leaders must maintain positive

control of their strategic arsenal and second, they do not wish to concentrate all of their missiles into a relatively small, closely controlled area. For these reasons, we believe that the prudent Soviet military planner is likely to rely more heavily on the mobile and controllable submarine force.

The current capability of the 63 Soviet submarines is about 4,000 warheads.⁹ Given the current political situation in the Soviet Union, this does not appear to be an area with significant excess. If we assume that military leaders would desire a two-thirds sea based capability and one-third shore based, there is in fact no excess based on a limit of 6,000 warheads and a current capability of 4,000. Therefore, in this area, we conclude that a significant excess does not exist in the Soviet's mind with regard to strategic forces and U.S. arms control planners should not target this area.

The next aspect of the Soviet naval arsenal considered was their aircraft carrier. The Soviets probably have no need of an aircraft carrier such as the Admiral Kuznetzov to meet the goals of "defensive defense." However, with the Kuznetzov undergoing sea trials it is unlikely that this program will be scrapped. Especially when one considers the decline of the Communist Party, the idea of having an operational aircraft carrier is a big plus. The prestige associated with this

⁹ This number is derived by adding up the number of missiles carried by the submarines, from Jane's Fighting Ships, and multiplying by four - an arbitrary factor to account for multiple warheads. Planners with access to classified estimates could make a more detailed and accurate estimate.

type of capital ship goes a long way in demonstrating the nation's technological and military power.

For this reason, the expectation of the Soviets giving up this platform is unlikely even though the ship is not essential to the defensive naval model discussed. It is also unlikely that construction of the next carrier, already underway would be stopped due to the long lead times and work being generated by the construction. This would give the Soviets one carrier for each coast and be a symbol that they are a naval as well as a land power. However, with the Soviet economy in its current state, we feel it would be quite easy to get the Soviets to discontinue any further carrier construction beyond the two mentioned above. In fact, we feel that the Soviets would be so willing to suspend any expansion of the carrier program that U.S. planners should not be willing to give up anything significant (i.e. anything beyond that which is already planned) to limit the growth of the Soviet carrier program, i.e., the Soviets will cut these anyway.

Finally, this leaves the area of non-strategic naval forces. The main focus of this paper was the calculation of excess non-strategic forces and the final numbers from Table XXI are reproduced below.

TABLE XXI
EXCESS FORCES

Strike Submarines	140
Surface Strike	-9
Surface ASW	-6
Surface Escorts	22
Mine Warfare	161
Amphibious	61
Long Range Air	35
Attack Subs	26
Theater Surface	575
Patrol Combatants	62
Theater Aircraft	218

The most significant area for U.S. planners to concentrate on is the excess of strike submarines. There is a large excess (140) based on the "defensive defense" force posture described in this thesis. For years the Soviet submarine force was (and still is) a major concern of the U.S. Navy. The Soviet submarine force should be the West's primary target at the negotiating table.

We have calculated that there is a negative excess (i.e. a deficit) of surface strike forces and surface ASW totalling 15. A review of Table IV Miscellaneous Forces shows that there are 20 reserve surface units and 574 excess theater surface craft which could be activated to fill this gap. Theater surface units should be targets for arms control efforts done in conjunction with allies.

In summary, this thesis does not advocate arms control. In fact, we feel that many of the excesses that we calculated will be reduced unilaterally by the Soviets. If the United States Navy is forced to the bargaining table, the

methodology presented here is a valid one. The exact numbers and precise future make up of the Soviet Navy are open to criticism, but the method of assessing fruitful areas to obtain naval arms reduction is valid. Finally, the only significant area of concern to U.S. planners appears to be in the area of strike submarines and this should be the most fruitful goal of negotiators in the event of naval arms control talks.

APPENDIX: GLOSSARY

Active Long Range Maritime Forces	All active strike submarines, surface strike and surface ASW vessels, surface escorts, mine warfare ships in excess of 1000 tons, amphibious LPD/LSTs, and long range aircraft. See individual categories for definitions. Generally refers to units capable of distant water operations.
Active Theater Maritime Forces	Hotel II and Golf II ballistic missile submarines, attack submarines, surface units, patrol combatants, mine warfare ships from 100-1000 tons, amphibious LSM, and theater aircraft. See individual categories for definitions. Generally refers to units likely to operate under protective umbrella of land based aviation.
ACW	Anti-carrier warfare.
Amphibious Forces	Ships having the organic capability to carry troops (number in parentheses) and equipment. Does not include Soviet Merchant Marine Assets which are not under routine control of Navy but could significantly increase distant water operations in a more benign environment.
ASW	Anti-submarine warfare
Attack Submarine	Active SS and SSC of K, Q, R, W, Z classes not assigned training roles (active theater maritime forces).
AXT	Training ship. Counted as Auxiliary warship. Certain of these units are well armed and could be a valuable wartime asset. Where armament is significant, counted in Misc. surface forces.

AXT/MM	A Yugoslavian ship primarily operated as a training ship but credited with a possible minelaying role in war.
Blk-COM 1	A NATO designation used to give a provisional name to a combatant being built in the Black Sea. In this case, the unit has been identified as a cruiser.
CG	Missile cruiser. Principal surface combatant with extensive command and control capability and armament. Armed with surface-to-surface missiles whose range exceeds 60 n mi, or ASW missiles whose range exceeds 20 n mi, or surface-to-air missiles whose range exceeds 10 n mi. Udaloy and Sovremenny class major DDGs meet this test and are larger than Kynda class cruisers.
CG/CL	Used herein to designate Sverdlov class cruiser. Only one has surface-to-air missiles while a few have been extensively modified for command and control and had previously been termed CC instead of the present CL.
CGN	Nuclear powered cruiser. See CG.
CHG	Aviation cruiser. Carries at least 4 helicopters. See CG.
CL	Light cruiser. Similar to CG but lacks missiles. Has multiple-barrel main gun batteries of 100-180-mm bore.
Coastal Combatants	Naval units classed between patrol combatants and river/roadstead craft. Generally lack endurance for operations outside inshore waters and between 100-400 metric tons displacement. Includes PCF, PCS, PCSH, PT, PTG, PTGH, PTH (miscellaneous forces).
CVHG	V/STOL aircraft carrier. Capable of operating at least 4 vertical/short field take off and landing (V/STOL) aircraft. Armed with surface-to-surface

missiles whose range exceeds 60 n mi, or ASW missiles whose range exceeds 20 n mi, or surface-to-air missiles whose range exceeds 10 n mi.

DD	Destroyer. A general purpose surface warship capable of independent open ocean operations. Classed between cruisers and frigates. Functions primarily as an escort or in-shore bombardment.
DDG	Missile destroyer. See DD. See CG for criteria to be considered missile equipped.
FF	Frigate. Open ocean combatant classed between destroyers and corvettes. Generally not multi-purpose although can act as such but lack capability of destroyer. At least 1500 metric tons displacement and capable of >20 kts sustained speed.
FFG	Missile frigate. See FF. See CG for criteria to be considered missile equipped.
FFL	Corvette. Open ocean combatant classed between frigates and patrol combatants. Generally lack multi-purpose capability. Fall between 900-1500 metric tons displacement and capable of >20 kts sustained speed.
FF/MM	Refers to Finland frigate of Soviet Riga class modified to perform as minelayer.
FFT	Training frigate. See FF. Refers to Iraq Ibn Khaldun.
KGB Forces	Naval-type combatants operated by the Frontier Forces of the KGB. Such vessels fly a distinct Naval Ensign and are not properly counted as being in the Navy. Some are corvette sized but most are patrol or coastal combatants. Units in this force have a W preceding naval ship class designation. Includes WFF, WFFL, WPCS, and WPGF (miscellaneous forces).

Long-range Aircraft	Backfire bombers and Bear F MPA/ASW fixed wing aircraft (long range maritime forces).
LPD	Amphibious assault transport dock. Major long range, deep water ship capable of launching assault vehicles via wet well. Helicopter capable. Soviet Ivan Rogov class.
LSM	Medium amphibious assault landing ship. Capable of extended open ocean operation but primarily expected to be used in theater role. <600 metric tons cargo.
LST	Amphibious vehicle landing ship. Capable of extended open ocean operation. >600 metric tons cargo.
Major DDG	Sovremenny and Udaloy classes. Armament meets criteria of being a CG. Ships are larger than Kynda class cruisers. <i>Jane's</i> classifies as CG.
MCS	Mine countermeasures support ship. Provides command, control, and communications, support for other mine countermeasures ships. Probably has minelaying capability. Soviet Alesha class of 2,630 metric tons (frigate sized).
Miscellaneous Forces	R&D ballistic missile submarines, reserve attack submarines, miscellaneous submarines, miscellaneous surface forces not elsewhere classifiable, coastal combatants, reserve surface, and KGB forces. See individual categories for definitions.
Miscellaneous Submarines	Y SSBN undergoing conversion to SSN, all SSA, SSQ, SSR, SST, SSTG (miscellaneous forces).
Misc. Surface Forces	Armed AXT and PGR (miscellaneous forces).
MM	Minelayer

MM/AKR	Minelayer/roll on-roll off cargo ship. Refers to a Libyan 2800 metric ton transport which has been used as a minelayer.
MPA	Maritime patrol aircraft. Fixed wing.
MSC	Coastal minesweeper. Normally between 250-500 metric tons. Probably capable of patrol duties and minelaying.
MSF	Fleet minesweeper. Open ocean capability. Might have ASW and patrol capability. Probably capable of minelaying. Generally >500 metric tons.
NSWTO	Non-Soviet Warsaw Treaty Organization Nations.
Patrol Combatants	A combatant classed between larger corvettes (FFL) and smaller coastal combatants. Intended for coastal defense but beyond inshore waters. Generally <20 kts sustained speed and between 400-900 metric tons displacement. Includes PG, PGF, PGG, PGGH (active theater maritime forces).
PCF	Fast patrol craft. Coastal combatant with sustained speeds >24 kts.
PCS	Submarine chaser. Coastal combatant oriented to ASW.
PCSH	Hydrofoil submarine chaser. See PCS.
PG	Patrol combatant. Main gun at least 76-mm.
PGF	Patrol ship. Gun armed patrol combatant with <20 kt sustained speed.
PGG	Missile patrol combatant. See PG. Armed with some type missile of any range.
PGGH	Hydrofoil missile patrol combatant. See PG and PGG.

PGR	Reconnaissance patrol combatant. Miscellaneous naval surface ship fitted with early warning radar. Generally these are converted T-43 and T-58 MSF.
PT	Torpedo boat. Coastal combatant. May have limited ASW capability.
PTG	Missile torpedo boat. Coastal combatant equipped with antiship missiles vice torpedoes.
PTGH	Hydrofoil missile torpedo boat. See PTG.
PTH	Hydrofoil torpedo boat. See PT.
R&D Ballistic Missile Subs	Hotel III SSBN, Golf I, III, IV, V class SSB (miscellaneous forces).
Reserve Attack Submarines	Q, W, and Z class SS/SSC assigned to reserve fleet (miscellaneous forces).
Reserve Surface	CG/CL, DD, FF, and MSF assigned to reserve fleet (miscellaneous forces).
SS	Attack or strike submarines. Diesel-electric powered, torpedoes and mines are main armament. Soviet F, K, R, T, W, Z classes.
SSA	Auxiliary submarine. Non-combatant. Soviet I and L classes.
SSB	Ballistic missile submarine. Diesel-electric powered. Soviet G class.
SSBN	Nuclear powered ballistic missile submarine. Soviet D, H, Y, and Typhoon classes.
SSC	Coastal submarine. Short endurance defensive coastal operations. Normally <1400 metric tons submerged displacement. Soviet Q class in reserve fleet.
SSG	Cruise missile submarine. Diesel-electric powered. Soviet J class.

SSGN	Nuclear powered cruise missile submarine. Soviet C, E, O, P classes.
SSM	Surface-to-surface missiles.
SSN	Nuclear powered attack or strike submarine. Soviet A, E, N, V classes.
SSQ	Communications submarine. Non-combatant Soviet G-I conversions.
SSR	Radar picket submarine. Soviet W class modified to carry early warning radar.
SST	Training submarine. Soviet B class used as target and Q submarines assigned as training units.
SSTG	Cruise missile training submarine. Soviet modified W class.
Strategic Forces	Nuclear powered ballistic missile submarines accountable under SALT I.
Strike Submarines	Active SSGN and SSNs (all), J, SSG, F, and T SS. These units are those currently forward deployed or likely to do so in event of war (long range maritime forces).
Surface ASW	All CHG and those CG and major DDG whose major weapons systems indicate ASW as the primary missions (long-range maritime forces).
Surface Escorts	All DDG and FFG (long-range maritime forces).
Surface Strike	All CVHGs, and CGNs and those CG, CI, major DDG whose major weapons systems indicate a surface strike role as a primary mission (long range maritime forces).
Theater Aircraft	Badger and Blinder bombers, Fitter and Forger fighter/bombers, Mail and May MPA/ASW fixed wing aircraft (active theater maritime forces).

Theater Ballistic Missile Submarines	SSBN, SSBs of Hotel II and Golf II classes (active theater maritime forces).
Theater Surface	DD, FF, FFL lacking missiles (active theater maritime forces).
Warship	The Soviets claim that <u>any</u> State-owned ship which flies the Naval Ensign or the flags of the Auxiliary Vessels, Hydrographic Vessels, or Emergency Reserve Vessels of the Soviet Navy are warships or the legal equivalent of warships. Such ships do not need to be painted gray, have armament, or have an all-military crew.
WFF	KGB frigate. See FF.
WFFL	KGB Corvette. See FFL.
WPCS	KGB submarine chaser. See PCS.
WPGF	KBG patrol ship. See PGF.

BIBLIOGRAPHY

Brooks, Thomas A., Statement to Seapower, Strategic, and Critical Materials Subcommittee of the House Armed Services Committee on Intelligence Issues, 14 March 1990.

Combat Fleets of the World, ed. Barnard Prezelin (English language version prepared by A.D. Baker III), Naval Institute Press: Annapolis, MD, 1990.

Jane's Fighting Ships, ed. Richard Sharpe, Jane's Information Group, Inc.: Coulsdon, Surry, England, 1990.

The Military Balance, The International Institute for Strategic Studies: London, 1990.

Soviet Military Power, Department of Defense, United States of America, 1990.

Tritten, James J., *Soviet Naval Forces and Nuclear Warfare: Weapons, Employment, and Policy*, Westview Books: Boulder, CO, 1986.

Tritten, James John, "Soviet Navy Data Base: 1982-1983," RAND P-6859, April 1983.

INITIAL DISTRIBUTION LIST

		No. of Copies
1.	Defense Technical Information Center Cameron Station Alexandria, VA 22304-6145	2
2.	Library, Code 52 Naval Postgraduate School Monterey, CA 93943-5002	2
3.	OP-60, The Pentagon, Room 4E556 Office of the Chief of Naval Operations Washington, D.C. 20350	1
4.	OP-607, The Pentagon, Room 4D563 Office of the Chief of Naval Operations Washington, D.C. 20350	1
5.	Dr. Thomas C. Bruneau Chairman, National Security Affairs (NS/Bn) Naval Postgraduate School Monterey, CA 93943	1
6.	Dr. James J. Tritten Code NS/Tr Naval Postgraduate School Monterey, CA 93943	1
7.	R.N. Channell Code NS/Ch Naval Postgraduate School Monterey, CA 93943	1
8.	CDR Diane Carnovale, USN OP-603, The Pentagon, Room 4486 Office of the Chief of Naval Operations Washington, D.C. 20350	1

- | | | |
|-----|--|---|
| 9. | CAPT Thomas Ellsworth, USN
OP-0922 Pnt Room 5B719
Office of the Chief of Naval Operations
Washington, D.C. 20350 | 1 |
| 10. | Dr. Al Andrus
Arms Control Coordinator & Head Wargaming
& Regional Studies Branch
Operations Research Division
SHAPE Technical Centre - P.O. Box 174
2501 CD The Hague
THE NETHERLANDS | 1 |
| 11. | CAPT Thomas Fedyszyn, USN
Director, Defense Operations Division
US NATO/DoD
Box 102
APO NY 09667-5028 | 1 |
| 12. | George F. Kraus, Jr.
Commander, U.S. Navy (Ret.)
Foreign Systems Research Center
Science Applications International Corp.
6021 South Syracuse Way, Suite 300
Greenwood Village, CO 80111 | 1 |
| 13. | CDR Robert M. Meissner, USN
Executive Director
General Advisory Committee on Arms Control
& Disarmament
Arms Control & Disarmament Agency
Department of State
Washington, D.C. 20451 | 1 |
| 14. | CAPT Terry R. Sheffield, USN
Deputy Chief of Staff, Plans & Policy
CINCUSNAVEUR - Box 9
FPO NY 09510-0151 | 1 |

- | | | |
|-----|---|---|
| 15. | CAPT William C. Vivian, USN
Deputy Chief, Policy & Programmes Branch
Policy/HPP
Supreme Headquarters Allied Powers, Europe
B-7010, SHAPE, Belgium
APO NY 09055 | 1 |
| 16. | LT Richard Shirer, Jr., USN
c/o Wanna Shirer
218 W. Gatehouse Dr., Apt. F
Metairie, LA 70001 | 1 |
| 17. | LT Diego Corral, USN
PSC 812
ASWOC Sigonella
FPO AE 09627-0812 | 1 |